

A NEW GENUS AND NEW SPECIES OF PYRAUSTINAE (LEPIDOPTERA, CRAMBIDAE)

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Abstract *Tonulisquana* gen. nov. is erected for *Sinibotys obliquilinealis* Inoue and two additional species *T. ceratophora* sp. nov. and *T. ovata* sp. nov. Images of the adults and illustrations of the genitalia are provided along with a key for the identification of the three species.

Key words Lepidoptera, Crambidae, Pyraustinae, *Tonulisquana*, new genus, new species, China.

Introduction

The species *Sinibotys obliquilinealis* Inoue 1982 is found to have some unusual characters which are obviously different from those of *Crocilophora hoenei* Caradja 1932, the type species of the genus *Sinibotys*: the forewing without scales on some areas; the male edium bearing special sparse setae; and the female ductus bursae slender and long. The examination of the specimens collected from different localities in China showed that the two new species described in this paper are closely allied to *S. obliquilinealis* Inoue. Herein, *Tonulisquana* gen. nov. is erected to accommodate these three species.

All the specimens, including the types of the new species, are deposited in the Insect Collection, College of Life Sciences, Nankai University, Tianjin, China.

Tonulisquana gen. nov.

Type species *Sinibotys obliquilinealis* Inoue 1982

Description. Adult. Frons rounded. Labial palpus more or less upturned obliquely, exceeding frons by less than or equal to length of head; third segment perfect. Maxillary palpus prominent, slightly dilated with scales distally (Fig. 5). Forewing with some unscaled and semitransparent areas, having large and pale fuscous scale clusters beneath; unscaled areas distributed basally above upper margin and below lower margin of cell; sometimes distributed on outside of cell. Sc and R₁ stalked; cell less than half length of wing; anterior and posterior margins curved; R₃ and R₄ stalked for about 3/5 distance from cell to apex; M₁ from middle of discocellulars; M₃ slightly approximated with M₂ at base; CuA₂ from posterior 2/3 of cell; 1A curved basally. Hindwing with cell less than half length of wing; Sc+R₁ and Rs anastomosed

for 1/3 distance of Rs; discocellulars oblique posteriorly; M₃ slightly approximated with M₂ at base; CuA₂ from posterior 2/3 of cell (Fig. 1).

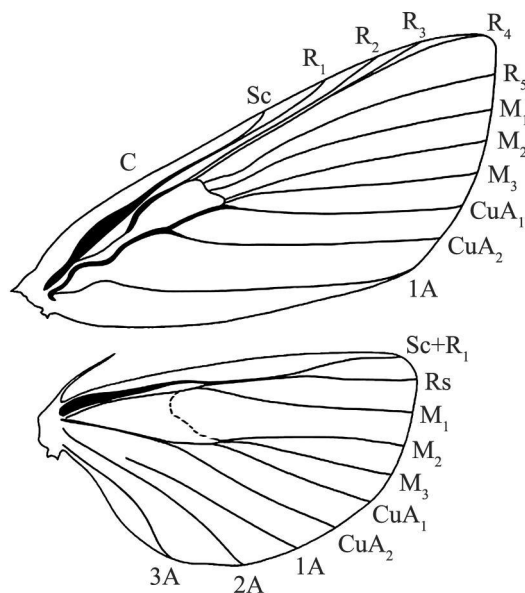


Fig. 1 *Tonulisquana obliquilinealis* (Inoue), venation

Male genitalia. Uncus narrow, triangular, narrowly rounded at apex, densely setose. Valva narrow and long with straight dorsal margin and curved ventral margin, apex asymmetrically rounded. Edium with sparse special setae arranged in a line; sella prominent, irregular in shape. Saccus triangular. Juxta small, nearly hexagonal or semicircular. Phallus with deciduous spicula cluster.

Female genitalia. Ovipositor lobes setose. Apophyses long and thin. Ostium bursae composed of a pair of sclerites. Ductus bursae relatively slender and very long. Corpus bursae with a rhomboidal signum.

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Figs. 2-5. Adults of *Torulisquama* spp. 2. *T. ceratophora* sp. nov., holotype. 3. *T. ovata* sp. nov., paratype. 4-5. *T. obliquilinealis* (Inoue). 5. Head.

and an appendix bursae.

Diagnosis. *Torulisquama* is allied to *Sinibotys* Munroe et Mutuura but can be distinguished by the forewing expanse ranging from 22 to 27 mm only, having some unscaled and semitransparent areas with large and light fuscous scale clusters beneath, the male transtilla without setae and the editum sparsely with special setae, the female ductus bursae slender and long and the corpus bursae and signum small. In *Sinibotys* Munroe et Mutuura the forewing expanse ranges from 36.0 to 47.5 mm and lacks unscaled area; the male transtilla has setae and the editum bears dense special setae, the female ductus bursae is relatively broad and short and the corpus bursae and the signum are much larger.

Torulisquama gen. nov. is also close to *Nephelobotys* Munroe et Mutuura in Pyraustinae by the forewing having unscaled areas. But in the new genus the unscaled areas are distributed both above and below cell at base, while in *Nephelobotys* Munroe et Mutuura the one unscaled area is distributed below cell only.

Etymology. The generic name is derived from the Latin prefix *tonul-* (= tuft) and the word *squama* (= scale), referring to the scale tufts beneath the

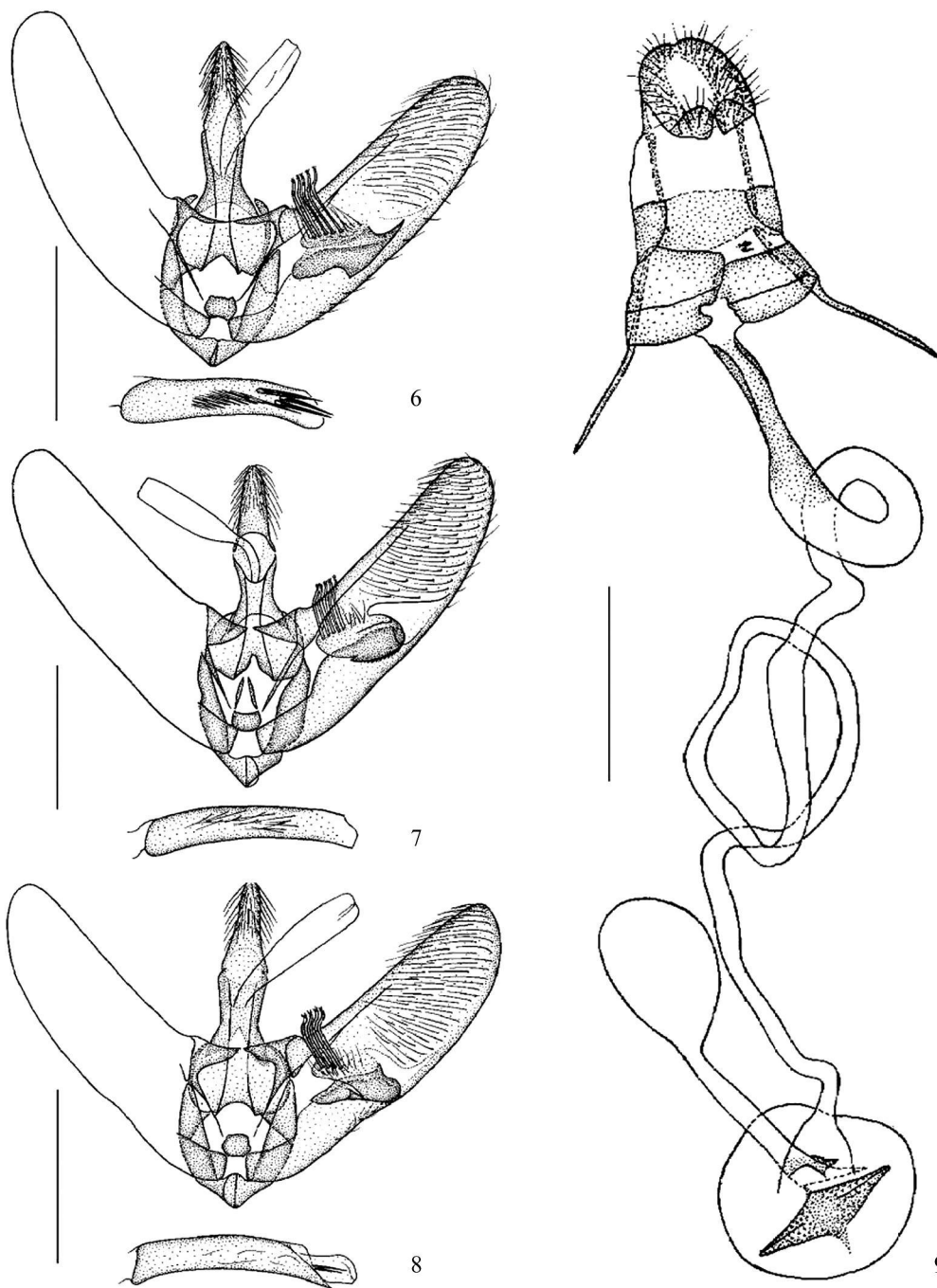
forewing. The gender is feminine.

Key to species of *Torulisquama*.

1. Forewing with unscaled semitransparent area on outside of cell phallus without cornutus 2
Forewing without unscaled area on outside of cell phallus with long horn-shaped cornuti (Fig. 2) *T. ceratophora* sp. nov.
2. Forewing with narrow subterminal band, sella oval with a minute ventroapical spine directed to base of valva (Fig. 7)
..... *T. ovata* sp. nov.
Forewing with broad subterminal band, sella blade-shaped with a small triangular spine at about dorsal 3/4 directed to costa (Fig. 8)
..... *T. obliquilinealis* (Inoue)

Torulisquama ceratophora sp. nov. (Figs. 2, 6)

Description. Adult (Fig. 2). Male wingspan 22 mm. Frons yellow, with vertical creamy white stripes laterally. Vertex pale yellow. Labial palpus deep yellow except white at base beneath. Maxillary palpus deep yellow, paler terminally. Proboscis with creamy white scales at base. Antenna pale yellow. Thorax above pale yellow, beneath dirty white. Legs dirty white, foreleg with coxa and femur pale yellow, tibia with broad pale yellow subapical ring, first tarsal segment pale yellow at middle, third to fifth tarsal segments pale yellow at apices, mid tibia pale yellowish fuscous on outer side.



Figs 6-9. Genitalia of *Tonsuana* spp. 6. *T. aenatophora* sp. nov. (genitalia slide No. ZDD02329) 7. *T. ovata* sp. nov. (genitalia slide No. ZDD01860) 8-9. *T. obliquilinealis* (Inoue) 8. Male 9. Female Scale bars= 1 mm.

Wings pale yellow, markings pale fuscous. Forewing having unscaled areas at base above upper margin and below lower margin of cell; costa yellowish fuscous; antemedial line incomplete, reaching dorsal $1/3$; reniform stigma short and straight; postmedial line from costal $2/3$ arched to basal $1/3$ of Cu_1 , then dentated to middle of dorsum; subterminal band faint. Hindwing with postmedial line blur; subterminal band same as forewing. Fringe pale yellow, fuscous at anal

angle.

Male genitalia (Fig. 6). Juxta nearly hexagonal. Edithum with five to seven special setae; sella large, produced to a thick fingerlike medial process on inside and a horn-shaped ventroapical process on outside; sacculus with distal $2/3$ inflated. Phallus with three long and thick, horn-shaped cornuti.

Female Unknown

Distribution. China (Gansu).

Holotype ♂, China Kang County (33°20'N, 105°36'E), Gansu Province, 1100 m, 1 June 1995, leg. A. Ishihara. Material genitalia slide No. ZDD02329.

Diagnosis. Similar to *T. obliquilinealis* (Inoue), but can be distinguished by the paler forewing with faint markings and lacking unscaled area on outside of cell the sella in male with a horn-shaped process on outside and the phallus with three thorn-shaped cornuti. In *T. obliquilinealis* (Inoue), the forewing color is much deeper, the markings are distinct and the unscaled area is present on outside of cell the sella is rounded and bears no process on outside, and the phallus lacks cornutus.

Etymology. The specific name is derived from the Latin *ceratophorus* (= horny), in reference to the horn-shaped process of the sella.

Torulisquama ovalis sp. nov. (Figs 3, 7)

Description. Adult (Fig. 3). Male wingspan 25-27 mm. Frons yellowish fuscous with vertical creamy white stripes laterally. Vertex pale yellow. Labial palpus yellowish fuscous, white at base beneath. Maxillary palpus yellowish fuscous, pale yellow terminally. Proboscis with white scales at base. Antenna above brownish yellow, beneath fuscous. Thorax above pale yellow, beneath dirty white. Legs dirty white, foreleg with coxa and femur pale yellow, tibia with broad fuscous subapical ring, tarsus mostly pale fuscous, mid tibia fuscous on outer side, hindleg with very small outer spur. Abdomen above yellowish fuscous, beneath dirty white, posterior margin of each segment white.

Wings pale yellow, markings fuscous. Forewing having unscaled areas at base above upper margin and below lower margin of cell as well as on outside of cell, costa fuscous, antemedial line from costal 1/4 to dorsal 1/3, reniform stigma prominent, postmedial line serrate from costal 2/3 almost parallel with termen to Cu_2 , then to dorsal 1/3, subterminal band narrow, veins with fuscous spots at end, fringe yellow, fuscous at anal angle. Hindwing with blur postmedial line, subterminal band and fringe concubous with forewing.

Male genitalia (Fig. 7). Juxta nearly semicircular. Edium with five special setae, sella oval, serrate on ventral margin, with a minute ventroapical spine on inside directed to base of valva, sacculus with distal half inflated. Phallus weakly curved.

Female. Unknown.

Distribution. China (Hubei, Hunan).

Holotype ♂, China Zhangjiajie (29°49'N, 110°26'E), Hunan Province, 650 m, 7 Aug. 2001, leg. LI Hou-Hun and WANG Xin-Pu. Paratypes

China 1 ♂, same data as for holotype; 1 ♂, Shimen County (29°35'N, 111°22'E), Hunan Province, 504 m, 4 May 2002, leg. YU Hai-Li; 5 ♂♂, Wufeng County (30°12'N, 116°40'E), Hubei Province, 1000-1100 m, 10-12 July 1999, leg. LI Hou-Hun; 1 ♂, Xianfeng County (29°40'N, 109°08'E), Hubei Province, 1280 m, 20-21 July 1999, leg. LI Hou-Hun.

Diagnosis. This species is similar to *T. obliquilinealis* (Inoue), but can be separated by the narrow subterminal band, and the oval sella with minute spine directed to base of valva. In *T. obliquilinealis* (Inoue), the subterminal band is much broader, the sella is blade-shaped and bears a triangular dorsal spine directed to costa.

Etymology. The specific name is derived from the Latin *ovatus* (= oval), referring to the oval sella.

Torulisquama obliquilinealis (Inoue, 1982) comb. nov. (Figs 4-5, 8-9)

Simoblys obliquilinealis Inoue, 1982: 351, pl. 41: 35, pl. 308: 2; Song & He, 1997: 1205; Song, 2001: 206, fig. 26-905; Wang *et al.*, 2003: 258, pl. IV: 9, fig. 330.

Wingspan 22.0-24.5 mm.

Material examined. China 27 ♂♂, 1 ♀, Hefeng County, Hubei Province, 1260 m, 15-18 July 1999, leg. LI Hou-Hun; 41 ♂♂, Wufeng County, Hubei Province, 1000-1100 m, 10-12 July 1999, leg. LI Hou-Hun; 18 ♂♂, Xianfeng County, Hubei Province, 1280 m, 20-22 July 1999, leg. LI Hou-Hun; 1 ♂, Mt. Badagong, Sangzhi County, Hunan Province, 1250 m, 12 Aug. 2001, leg. LI Hou-Hun and WANG Xin-Pu; 1 ♂, Mt. Fanjing, Guizhou Province, 1300 m, 3 Aug. 2001, leg. LI Hou-Hun and WANG Xin-Pu.

Distribution. China (Fujian, Guizhou, Hubei, Hunan, Jiangxi, Shanxi, Sichuan), Japan.

Remarks. This species is characterized by the forewing having an unscaled area on outside of cell, the deeper and distinct color of markings, the broad subterminal band nearly reaching termen (Fig. 4); the blade-shaped sella bearing a triangular dorsal spine directed to costa (Fig. 8); the ostium bursae composed of a pair of sclerites and the appendix bursae with a long handle (Fig. 9). It is similar to *T. ovata* sp. nov. and *T. ceratophora* sp. nov., but can be distinguished by having a conspicuously broad fuscous subterminal band.

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野螟亚科一新属和二新种记述 (鳞翅目, 草螟科)

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摘要 建立了窗野螟属 *Torulisquama* gen. nov., 记述了 2 新种, 即角窗野螟 *T. ceratophora* sp. nov. 和椭圆窗野螟 *T. ovata* sp. nov.。文中提供了成虫和外生殖器特征图, 编制了窗野螟属分种检索表。模式标本保存在南开大学昆虫标本室。

窗野螟属, 新属 *Torulisquama* **gen. nov.**

模式种: 斜纹窗野螟 *Sinibotys obliquilinealis* Inoue 1982

该属与东方野螟属 *Sinibotys* Munroe *et* Mutuura 外形相似, 但可通过以下特征区别: 翅展 22~27 mm; 前翅具半透明无鳞片区, 在翅的腹面该区被粗大浅褐色鳞片簇; 雄性外生殖器抱器背基突无刚毛, 抱器内突被稀疏的特化刚毛; 雌性外生殖器囊导管纤细而长, 交配囊和囊突小。该属与云纹野螟属 *Nephelobotys* Munroe *et* Mutuura 前翅均有半透明无鳞片区, 可通过前翅基部中室前缘外具半透明无鳞片区来区别。

属名来源于拉丁词前缀 *tonus* (丛生) 和 *squama* (鳞片), 表示前翅半透明无鳞片区的腹面被鳞片簇。学名阴性。

角窗野螟, 新种 *Torulisquama ceratophora* **sp. nov.** (图 2-6)

关键词 鳞翅目, 草螟科, 野螟亚科, 窗野螟属, 新属, 新种。
中图分类号 Q969.42

该种与斜纹窗野螟 *Torulisquama obliquilinealis* (Inoue) 外部相似, 但可通过以下特征区别: 前翅颜色浅, 斑纹弱, 中室没有无鳞片区; 雄性外生殖器的抱器下突向抱器端伸出角状突起, 阳茎内有三根粗针状角状器。

正模 ♂, 甘肃康县 (33°20'N, 105°36'E), 1995-06-01, 艾斯哈尔·买买提采。

椭圆窗野螟, 新种 *Torulisquama ovata* **sp. nov.** (图 3-7)

该种与斜纹窗野螟 *Torulisquama obliquilinealis* (Inoue) 外部相似, 但可通过以下特征区别: 前翅亚外缘带窄; 雄性外生殖器的抱器下突近椭圆形, 腹缘有锯齿。

正模 ♂, 湖南张家界, 2001-08-07, 李后魂、王新谱采。
副模: 1 ♂, 采集资料同正模; 1 ♂, 湖南石门县 (29°35'N, 111°22'E), 2002-05-04, 于海丽采; 5 ♂♂, 湖北五峰 (30°12'N, 116°40'E), 1999-07-10~12, 李后魂采; 1 ♂, 湖北咸丰 (29°40'N, 109°08'E), 1999-07-20~21, 李后魂采。

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